## CLAIMS

What is claimed is:

1. A system for interfacing with and handling disk drives in an automated library having a drawer with a drawer connector, the apparatus comprising:

a disk drive carrier having a disk drive mounted thereto, a backplane connector adapted to interconnect with the drawer connector, and an interface connector, wherein the disk drive carrier is adapted to be inserted into the drawer;

a picking tool having securing means for securing the disk drive carrier to the picking tool, and interface means for interfacing with the interface connector of the disk drive carrier; and

control means for controlling the picking tool and communicating information with the disk drive through both the backplane connector via the drawer connector, and through the interface connector via the interface means, such that the picking tool is adapted to remove the disk drive carrier from the drawer, transport the disk drive carrier, and place the disk drive carrier in the drawer.

2. The system of claim 1 wherein the disk drive carrier has a hole through which the interface means of the picking tool extends.

3. The system of claim 1 wherein the interface connector and the interface means utilize optical service interfaces.

4. The system of claim 3 wherein the optical service interfaces utilize matched pairs of LEDs and phototransistors.

5. The system of claim 1 wherein the securing means of the picking tool is an electromagnet.

6. The system of claim 1 wherein the interface means is a tapered guide pin.

7. The system of claim 1 wherein the securing means provides horizontal support for the disk drive carrier, and the interface means provides vertical support for the disk drive carrier.

8. The system of claim 1 wherein the disk drive carrier is attracted to and repelled from the picking tool by reversibly actuating the securing means.

9. An automated disk drive library, comprising:

a drawer having a drawer connector;

a disk drive carrier for insertion into and removal from the drawer, the disk drive carrier having a disk drive mounted thereto, a backplane connector for interconnecting with the drawer connector, and an interface connector;

a picking tool having securing means for securing the disk drive carrier to the picking tool, and interface means for interfacing with the interface connector of the disk drive carrier, wherein the disk drive carrier is attracted to and repelled from the picking tool by reversibly actuating the securing means; and

control means for controlling the picking tool and communicating information with the disk drive through both the backplane connector via the drawer connector, and through the interface connector via the interface means, such that the picking tool removes the disk drive carrier from the drawer, transports the disk drive carrier, and places the disk drive carrier in the drawer.

10. The automated disk drive library of claim 9 wherein the disk drive carrier has a tapered hole through which the interface means of the picking tool extends, and wherein the tapered hole and interface means are complementary in shape.

11. The automated disk drive library of claim 9 wherein the interface connector and the interface means utilize optical service interfaces having matched pairs of LEDs and phototransistors.

12. The automated disk drive library of claim 9 wherein the securing means of the picking tool utilizes electromagnets that selectively attract and repel the disk drive carrier via magnets secured to the disk drive carrier.

13. The automated disk drive library of claim 9 wherein the interface means is a tapered guide pin having a service interface on a distal end for interfacing with the interface connector of the disk drive carrier.

14. The automated disk drive library of claim 9 wherein the securing means provides horizontal support for the disk drive carrier, and the interface means provides vertical support for the disk drive carrier.

15. A method of interfacing with and handling disk drives in an automated library having a drawer with a drawer connector, the method comprising:

(a) providing a disk drive carrier having a disk drive, a backplane connector and an interface connector, and a picking tool having a securing mechanism and an interface mechanism;

(b) engaging and supporting the disk drive carrier with securing and interface mechanisms of the picking tool and mounting the disk drive carrier in the drawer such that the backplane connector engages the drawer connector;

(c) communicating information with the disk drive through both the backplane connector via the drawer connector, and through the interface connector via the interface mechanism; and

(d) removing the disk drive carrier from the drawer with the picking tool.

16. The method of claim 15 wherein step (c) comprises sending and receiving data through optical service interfaces.

17. The method of claim 15 wherein step (b) comprises inserting a guide pin into the disk drive carrier, and magnetically attracting the disk drive carrier to the picking tool.

18. The method of claim 15 wherein steps (b) and (d) comprise reversibly actuating the securing mechanism to attract and to repel the disk drive carrier relative to the picking tool.